REMARKS/ARGUMENTS

Claims 1-15 and 17-34 are pending in this application. By this Amendment, claims 1, 3-6, 12-13, and 15 are amended, claim 16 is canceled and claims 19-34 are added. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

A.   Claims 1-11 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,623,647 to Maitra and U.S. Patent No. 6,079,025 to Fung. Since Maitra and Fung, alone or in combination, fail to disclose or suggest all the features of the claims, the rejection is respectfully traversed.

1.   Applicants respectfully submit that Maitra discloses a method for managing the operating speed of a microprocessor that determines a computing requirement of an application empirically, for example, using a benchmark evaluator or application characterization unit 220. A clock programming unit 230 can set the operating speed of the microprocessor at a speed required by the application using clock controller unit 130 to adjust the frequency of the microprocessor clock. See column 6, lines 1-14 of Maitra. Thus, Maitra discloses adjusting a frequency of the microprocessor clock in accordance with processing requirements for an application. Further, the Office Action admits Maitra does not teach to measure CPU usage and compare it with predetermined reference CPU usage. See Item 4 on page 2 of the Office Action.

Fung fails to cure such deficiencies. Applicants respectfully submit that Fung discloses a power management unit 15 including a hardware monitor 79 and a software monitor 80. See

column 6, lines 53-56. The hardware monitor 79 monitors the hardware to detect activity, for example, by sensing predetermined address ranges such as an I/O address range and a video memory address range for their activity. For example, the hardware monitor 79 can sense the activity of addresses on a bus 5. See column 7, lines 6-21 of Fung. The software monitor 80 monitors the activity of the operating system or other software in the system. For example, the software monitor 80 can monitor function calls to the operating system. See column 2, lines 51-55, column 5, lines 53-57 and column 8, lines 20-21 and column 11, lines 6-11 of Fung. Accordingly, Applicants respectfully submit that Fung discloses controlling a CPU speed based on activity (or inactivity) sensing. Thus, Fung fails to disclose or suggest, similar to Maitra, at least features recited in claim 1 of measuring a usage of the CPU and comparing the measured CPU usage with a predetermined reference CPU usage range, and adjusting the speed of the CPU responsive to the comparison and combinations thereof as recited. Further, Applicants respectfully submit that Maitra and Fung, individually or in combination do not teach or suggest any modifications to their disclosure that would result in at least features of measuring a usage of the computer and combinations thereof as recited.

2.   In addition, Applicants respectfully submit that it would not have been obvious to combine Maitra and Fung as there is no motivation in the references for that combination. In particular, Applicants respectfully submit that Maitra discloses adjusting a clock speed based upon determining an application's processing requirements. In contrast, Fung discloses determining a CPU clock speed based on sensing activity by a software monitor or a hardware

monitor. Applicants respectfully submit that there is no teaching or suggestion in Fung as to

how to modify the monitored activity in the software/hardware monitor to separate activity

based on <u>one or each individual application processing requirement</u> as taught by Maitra. Thus,

modifying Maitra in the manner suggested by the Office Action would detract from the teaching

in Maitra to control CPU process speed in accordance with an applications processing

requirement.

     3.   With respect to claim 5, Applicants respectfully submit that Maitra and Fung,

individually or in combination would not result in at least features of wherein if the measured

CPU usage is between a minimum and a maximum reference CPU usages of the predetermined

reference CPU usage range then the adjustment of the CPU speed is carried out by maintaining

the CPU speed and combinations thereof as recited. Applicants respectfully submit that Maitra

does not teach or suggest a predetermined reference <u>CPU usage range</u> and combinations thereof

as recited in claim 5. Further, Applicants respectfully submit that Fung does not teach or suggest

at least features of a predetermined reference CPU usage range, let alone adjustment of the CPU

speed within the predetermined reference CPU usage range by maintaining the CPU speed and

combinations thereof as recited. Further, Applicants respectfully submit that Maitra and Fung,

individually or in combination do not teach or suggest any modifications to their disclosure that

would result in at least features of the predetermined reference CPU usage range and

combinations thereof as recited in claim 5.

For at least the reasons set forth above, Applicants respectfully submit that claims 1 and 5 define patentable subject matter. Dependent claims 2-11 are allowable for at least the reasons discussed above with respect to independent claim 1, from which they depend, as well as for their added features. Withdrawal of the rejection of claims 1-11 under 35 U.S.C. §103 is respectfully requested.

B.   Claims 12-18 are rejected under 35 U.S.C. §102(b) over U.S. Patent No. 6,298,448 to Shaffer et al. (hereafter "Shaffer"). The rejection is respectfully traversed.

With respect to claim 15, Applicants respectfully submit that Shaffer fails to disclose every claimed feature as required under §102. For example, Shaffer fails to disclose at least features of wherein the third routine includes a first subroutine for reducing the speed if the measured CPU usage is less than a minimum reference CPU usage of the predetermined CPU range, a second subroutine for maintaining the speed if the measured CPU usage is within the predetermined CPU usage range and a third subroutine for recovering the speed if the measured CPU usage is more than a maximum reference CPU usage of the predetermined reference CPU usage range and combinations thereof as recited in claim 15.

In contrast, Applicants respectfully submit that Shaffer discloses determining and storing one or more application specific CPU performance requirements and variably controlling clock infrequency to be varied in response to said stored performance requirements. See column 1, lines 8-12; column 5, lines 32-40 and 61-64 and claims 1 and 3 of Shaffer. Shaffer discloses the CPU processing requirements associated with one or more application programs can be varied

in response to a level of CPU utilization. See column 4, line 51-column 5, line 20 and claims 11

and 13 of Shaffer. Thus, Applicants respectfully submit that Shaffer discloses a CPU usage

threshold to be used with the <u>application specific CPU performance requirements</u>. See column

5, lines 9-11 and Items 17-18 on pages 6-7 of the Office Aciton. Further, Applicants respectfully

submit that Shaffer does not teach or suggest any modification to its disclosure that would result

in at least features of a <u>predetermined CPU usage range</u> and combinations thereof as recited in

claim 15.

With respect to clam 12, Applicants respectfully submit that Shaffer does not teach or

suggest any modification to its disclosure that would result in at least features of a predetermined

<u>CPU usage range</u> in combination with a second circuit and a third circuit and combinations

thereof as recited.

For at least the reasons set forth above, Applicants respectfully submit that claims 12 and

15 define patentable subject matter. Dependent claims 13-14 and 17-18 are allowable for at least

the reasons discussed above with respect to independent claims 12 and 15, from which they

depend, as well as for their added features. Withdrawal of the rejection of claims 12-18 under

35 U.S.C. §102 is respectfully requested.

C.   Claims 19-34 are newly added by this Amendment and believed to be in condition

for allowance.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Carl R. Wesolowski**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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